

REMARKS

Claims 1-4, 6, 9-15, 17-21, 23-33 and 35-42 are pending in this application. By this Amendment, claims 1, 15, 21, 26 and 39 are amended, and claims 7, 9, 23 and 24 are amended to improve readability. No new matter is added.

The courtesies extended to Applicants' representatives by Examiner Sugent during the telephone interview held January 10, 2008, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicants' record of the interview.

The Office Action rejects claims 1-4, 6-15, 16-21, 23-30 and 35-38 under 35 U.S.C. §103(a) over Bose et al. (U.S. Publication No. 2004/0221185) in view of Luick (U.S. Patent No. 7,174,469) and rejects claims 31-33 and 39-42 under 35 U.S.C. §103(a) over Bose in view of Luick, and further in view of Theis (U.S. Publication No. 2005/0251621). The rejections are respectfully traversed.

Specifically, Applicants respectfully assert that Bose fails to disclose or suggest either alone or in combination, a method including at least the step of initiating a power increase for a potentially needed functional unit to an operable power level... when a use counter corresponding to the potentially needed functional unit contains a value other than a predetermined value, ... adjusting the use counter for a corresponding functional unit when the functional unit is either identified as potentially needed or when a software instruction, having a corresponding information vector identifying the corresponding functional unit as potentially needed, is eliminated from the instruction cache, as recited by independent claim 1.

Bose merely discloses a power management system for a processor in which an instruction is fetched into an instruction cache and predictions are made to determine what target

units of the processor are likely to be used. The prediction is based on previous history and the current instruction loaded, and is configured to predict the units required hundreds of cycles in advance. See paragraph [0037] and [0038] of Bose. The unit-level activity prediction logic subsequently enables and disables supply voltages to the target units. See paragraph [0040] of Bose. Bose discloses a duration counter (168) which is used to track the period of time a unit is active. The duration counter (168) is started after a unit is powered up. Thus, Bose fails to disclose or suggest a method including at least the step of initiating a power increase for a potentially needed functional unit to an operable power level... when a use counter corresponding to the potentially needed functional unit contains a value other than a predetermined value, and adjusting the use counter for a functional unit when the functional unit is identified as potentially needed or a software instruction corresponding to an information vector identifying the functional unit is eliminated from the cache, as recited in independent claim 1. Conversely, Bose discloses the duration counter is used to determine when to power down a unit based on how long since the duration counter started counting. See paragraphs [0046], [0047], and [0050]. Thus, independent claim 1 is patentable over Bose.

Further, Bose fails to disclose or suggest adjusting a use counter corresponding to an identified potentially needed functional unit, and identifying unneeded functional units, based on use counters that contain a predetermined value, as recited by independent claim 15.

Luick is relied upon by the Office Action to disclose pre-decoding instructions prior to the instruction being loaded into the instruction cache, but Luick fails to overcome the above-noted deficiencies of Bose with respect to independent claims 1 and 15. Luick discloses a power management process for a processor in which instructions are decoded and then re-encoded with a power-token appended to the instruction. The power-token indicates average power

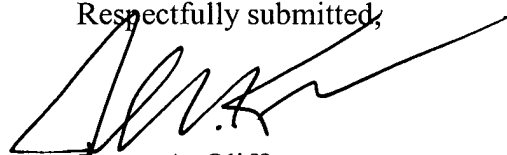
consumption expected for the execution of the instruction. For example, see Luick, col. 4, line 57 through col. 5, line 11. The processor then re-arranges the commands in an effort to optimize power dissipation. See Luick, col. 5 lines 47-62.

Bose and Luick, when combined or separately fail to disclose or suggest the combination of features recited by independent claims 1 and 15. Further, Theis fails to cure the deficiencies of Bose and Luick. Independent claims 21, 26 and 39 include similar features to those discussed above with reference to claim 1. Thus, claims 1, 15, 21, 26 and 39 are patentable over the applied references. Claims 2-4, 6-14, 17-20, 23-25, 27-33, 35-38 and 40-42 depend from claims 1, 15, 21, 26 and 39, respectively, and therefore are patentable over the applied references for at least the same reasons, as well as for the additional features they recite. Withdrawal of the rejections is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of all pending claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:
Petition for Extension of Time

Date: March 10, 2008

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